CLAIMS:

1. A method of fabricating a cathode, comprising:
depositing a carbon material on a portion of a titanium substrate;
annealing the carbon material and the substrate in a heated atmosphere at a reduced pressure to form an intermediate titanium carbide layer between the deposited carbon material and the titanium substrate; and
removing remaining carbon material to expose the intermediate titanium carbide surface as an active cathode material.

2. A method according to claim 1, further comprising the step of post-processing the titanium carbide layer.

3. A method according to claim 1, wherein the depositing step is performed by at least one of: an ink jet printing process, a thermal transfer printing process, a hot stamping process, a dye sublimation process, a screen printing process, a chemical vapor deposition process, a sputtering process, a manually painting process.

4. A method according to claim 3, wherein the ink jet printing process comprises a thermal ink jet printing process.

5. A method according to claim 3, wherein the ink jet printing process comprises a piezoelectric ink jet printing process.

6. A method according to claim 3, wherein the ink jet printing process comprises an acoustic ink jet printing process.

7. A method according to claim 1, wherein the carbon comprises substantially pure graphite.

8. A method according to claim 7, wherein the substantially pure graphite comprises a plurality of granules of graphite powder.

9. A method according to claim 1, wherein the removing step comprises a manual removal of the carbon.

10. A method according to claim 9, wherein the removing step comprises one of: abrading, rubbing, scraping, scuffing, chafing, filing, grating, brushing, polishing, wiping, or sanding.

11. A method according to claim 1, wherein the removing step comprises a machinery assisted removal step.

12. A method according to claim 1, wherein the machinery assisted step comprises one of: sanding, grinding, buffing, pneumatically-blasting with particulate material, polishing.

13. A method according to claim 1, wherein the titanium substrate comprises an interior portion of an electrochemical cell.

14. A method according to claim 13, wherein the electrochemical cell comprises a capacitor.

15. A method according to claim 14, wherein the capacitor comprises a tantalum anode spaced from the cathode and wherein the tantalum anode and the cathode are in fluid communication with an electrolyte.

16. A method according to claim 15, wherein the capacitor is disposed within a hermetically-sealed implantable medical device.

17. A method according to claim 16, wherein the implantable medical device comprise an implantable cardioverter-defibrillator.

18. A method according to claim 1, wherein the titanium substrate comprises a substantially flat portion of titanium and at least a part of the surface of said portion is roughened.

19. A method according to claim 1, further comprising activating the titanium carbide layer.

20. A method according to claim 1, wherein the carbon material comprises a carbon nanotube material.

21. A method according to claim 20, wherein the carbon nanotube material comprises a single-walled carbon nanotube material.

22. A method according to claim 3, wherein the chemical vapor deposition process comprises a plasma-enhanced chemical vapor deposition process.

23. A carbide cathode, consisting of:
a titanium substrate; and

a layer of titanium carbide disposed on a surface portion of said substrate.

24. A cathode according to claim 23, wherein the titanium substrate comprises a substantially flat sheet of titanium.

25. A cathode according to claim 23, wherein the titanium substrate comprises an interior portion of a casing for a capacitor.

26. A cathode according to claim 25, wherein the capacitor further comprises:
a valve metal anode spaced from the cathode;
a porous separator material disposed between the valve metal anode and the cathode; and
a liquid electrolyte in fluid communication with both the valve metal anode and the cathode.

27. A cathode according to claim 26, wherein the valve metal anode comprises a tantalum anode slug.

28. A cathode according to claim 27, wherein the capacitor is operatively coupled within an implantable medical device.

29. A cathode according to claim 28, wherein the implantable medical device comprises a cardioverter-defibrillator.

30. A cathode according to claim 29, further comprising a pair of capacitors operatively coupled within the cardioverter-defibrillator.